CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory
An ISO 9001:2008 Certified Company
NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ
BSCIC
ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.03/KRIDL/WMM/Gradation/2015-16

01.03.2016

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore.

Agency : **Mr. B.B. Umesh,**
SMPL Construction and Asphalt, No.02, 1st Floor, Reddy Complex, Mezar Sandeep Unnikrishnan Road, Attur Layout, Bangalore – 106.

Name of Work : Providing and asphalting to balance road and providing and laying pipeline in Chitra Layout in Attur Ward No.03, BBMP, Bangalore.

Reference : BBMP/AEE/YSSD/08/2015-16 Dated: 29.02.2016

Date of Testing : 01.03.2016

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 8715

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	325	325	3.7	96.3	95-100
22.4	2940	3265	37.5	62.5	60-80
11.2	1765	5030	57.7	42.3	40-60
4.75	1250	6280	72.1	27.9	25-40
2.36	635	6915	79.3	20.7	15-30
0.600	725	7640	87.7	12.3	8-22
0.075	515	8155	93.6	6.4	0-8

Note:

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01.03.2016

Aggregate Impact Value
IS: 2386 Part IV

Customer	**Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Agency	**Mr. B.B. Umesh,** SMPL Construction and Asphalt, No.02, 1st Floor, Reddy Complex, Mezar Sandeep Unnikrishnan Road, Attur Layout, Bangalore – 106.
Name of the Work	Providing and asphalting to balance road and providing and laying pipeline in Chitra Layout in Attur Ward No.03, BBMP, Bangalore.
Reference	BBMP/AEE/YSSD/08/2015-16 Dated: 29.02.2016
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	01.03.2016

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	388	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	304	299	
4	Aggregate Impact value = percent fines	21.65	22.54	
	100* (W_2/W_1)%			22.09

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.03/KRIDL/WMM/S-T/2015-16 01.03.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	**Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Agency	**Mr. B.B. Umesh,** SMPL Construction and Asphalt, No.02, 1st Floor, Reddy Complex, Mezar Sandeep Unnikrishnan Road, Attur Layout, Bangalore – 106.
Name of Work	Providing and asphalting to balance road and providing and laying pipeline in Chitra Layout in Attur Ward No.03, BBMP, Bangalore.
Reference	BBMP/AEE/YSSD/08/2015-16 Dated: 29.02.2016
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	01.03.2016

Result : Flakiness Index = **12.36%**

Elongation Index = **13.78%**

Result : Combined Flakiness & Elongation index 26.14%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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T-2377

Job No.: CTCE/BBMP/W.No.03/KRIDL/CSR-03/1096/QB/2015-16 15.03.2016

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

*CUSTOMER	:	**Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
*AGENCY	:	**Mr. B.B. Umesh,** SMPL Construction and Asphalt, No.02, 1st Floor, Reddy Complex, Mezar Sandeep Unnikrishnan Road, Attur Layout, Bangalore – 106.
*NAME OF THE WORK	:	Providing and asphalting to balance road and providing and laying pipeline in Chitra Layout in Attur Ward No.03, BBMP, Bangalore.
REFERENCE	:	BBMP/AEE/YSSD/08/2015-16 Dated: 29.02.2016
SOURCE OF LOCATION	:	Hot mix Plant, Bangalore
DATE OF SAMPLING		14.03.2016
DATE OF TESTING	:	15.03.2016

The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 °C, 1/10 mm	IS :1203 -1978 (RA-2009)	69	60 to 70
2	Softening point, °C	IS :1205 -1978 (RA-2009)	50	Min. 45
3	Ductility at 27°C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 50
4	Flash Point, °C	IS :1209 -1978 (RA-2009)	296	Min. 220

*Information furnished by the Customer/Representative

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VISHWANATH. I.A.
Executive Officer

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Job No.: CTCE/BBMP/W.No.03/KRIDL/SDBC/Bit/2015-16 16.03.2016

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC:SP:-1984

CUSTOMER	**Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.B. Umesh,** SMPL Construction and Asphalt, No.02, 1st Floor, Reddy Complex, Mezar Sandeep Unnikrishnan Road, Attur Layout, Bangalore – 106.
NAME OF THE WORK	Providing and asphalting to balance road and providing and laying pipeline in Chitra Layout in Attur Ward No.03, BBMP, Bangalore.
REFERENCE	BBMP/AEE/YSSD/08/2015-16 Dated: 29.02.2016
SAMPLE I/D	Roads in Chitra Layout in Attur Ward No.03
DATE OF TESTING	16.03.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475	474
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25	26.00
7. Bitumen content in %	5.00	5.20
8. Average	5.10	

Civil-Tech Consultants & Engineers Bangalore

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Job No.: CTCE/BBMP/W.No.03/KRIDL/SDBC/Bit/2015-16 16.03.2016

BITUMEN CONTENT GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.B. Umesh,** SMPL Construction and Asphalt, No.02, 1st Floor, Reddy Complex, Mezar Sandeep Unnikrishnan Road, Attur Layout, Bangalore – 106.
NAME OF THE WORK	Providing and asphalting to balance road and providing and laying pipeline in Chitra Layout in Attur Ward No.03, BBMP, Bangalore.
REFERENCE	BBMP/AEE/YSSD/08/2015-16 Dated: 29.02.2016
SAMPLE I/D	Roads in Chitra Layout in Attur Ward No.03
DATE OF TESTING	16.03.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	36.12	7.60	7.60	92.40	90-100
4.75	241.6	50.86	58.47	41.53	35-51
2.36	56.48	11.89	70.36	29.64	24-39
1.18	36.24	7.63	77.99	22.01	15-30
0.3	45.32	9.54	87.53	12.47	9-19
0.075	32.17	6.77	94.30	5.70	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	34.84	7.35	7.35	92.65	90-100
4.75	251.4	53.04	60.39	39.61	35-51
2.36	37.23	7.85	68.24	31.76	24-39
1.18	42.58	8.98	77.23	22.77	15-30
0.3	35.26	7.44	84.66	15.34	9-19
0.075	43.15	9.10	93.77	6.23	3-8

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